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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,803	03/08/2004	Adrianus Johannes Heinen	USP172145A	7714

7590 09/13/2007
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EXAMINER

AVERY, BRIDGET D

ART UNIT	PAPER NUMBER
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3618

MAIL DATE	DELIVERY MODE
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09/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/795,803	Applicant(s) HEINEN, ADRIANUS JOHANNES	
	Examiner Bridget Avery	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-25,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-25,29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 19-25, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugata (US Patent Publication 2002/0148669) in view of Gritter (US Patent 4,651,066).

Sugata teaches a traction assembly including an electric motor (30) that directly drives wheels (3) of the vehicle (1), the electromotor is positioned outside of the wheels (as clearly shown in Figure 1), the electromotor (30) having a housing (as clearly shown in Fig. 1); a stator assembly (32) connected to the housing and including at least two groups of physically separated windings; a rotor (33), coaxially and rotatably mounted with the stator and including permanent magnets, the rotor (33) is stationary with respect to the axis of rotation of the rotor (33) during operation (starting) of the electromotor (30); and a controller (46) that controls electric current in the windings (as clearly stated in col. 3, lines 57-59). The vehicle is self-propelled by the traction assembly. Re claims 23 and 25, Sugata anticipates the use of a master and slave setting. Re claim 24, the axle shaft is clearly shown with "joints".

Gritter teaches at least one old and well known measurement tool that measures an angular position of the rotor with respect to the stator (see col. 7, lines 14-18);

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operating means connected to a controller (46) and the at least one measurement tool; data communication means (211 as clearly shown in Figure 3) connected to the operating means for communicating data to outside the motor housing. The vehicle is self-propelled by the traction assembly. Re claim 20, the two means for measuring a magnetic field is inherent because of the teaching of a "magnetic circuit". Re claim 22, both axial ends of the rotor include attachment means (see bushing 148 and bearing 156) for the driving shaft (28).

Re claim 30, the combination of Sugata and Gritter et al. clearly teaches the method for driving a wheel of a vehicle, including driving the wheel with an electromotor; providing a stator connected to the motor housing; providing a rotor, coaxially and rotatably mounted with the stator; where the rotor is stationary with respect to the axis of rotation of the rotor during operation (startup) of the electromotor; controlling electric current in the windings; measuring an angular position of the rotor with respect to the stator; operating the electromotor in accordance with the controlled electric current and measured angular position and communicating data to outside the housing.

Based on the teachings of Gritter et al., it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to add a measurement means to the wheel drive of Sugata to determine the axial play between the two elements based on the difference angle between the stator and the rotor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add bushings to further secure the rotor to the axle shaft.

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Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pfannschmidt shows a drive including an external rotor motor for a vehicle wheel.

Heidelberg et al. shows a railway vehicle with direct drive electric motor.

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

4. Any inquiry concerning this communication should be directed to Bridget Avery at telephone number 571-272-6691.


Avery

August 6, 2006


JPE 3600 8/6/07
PAUL N. DICKSON